Fig. 1-1

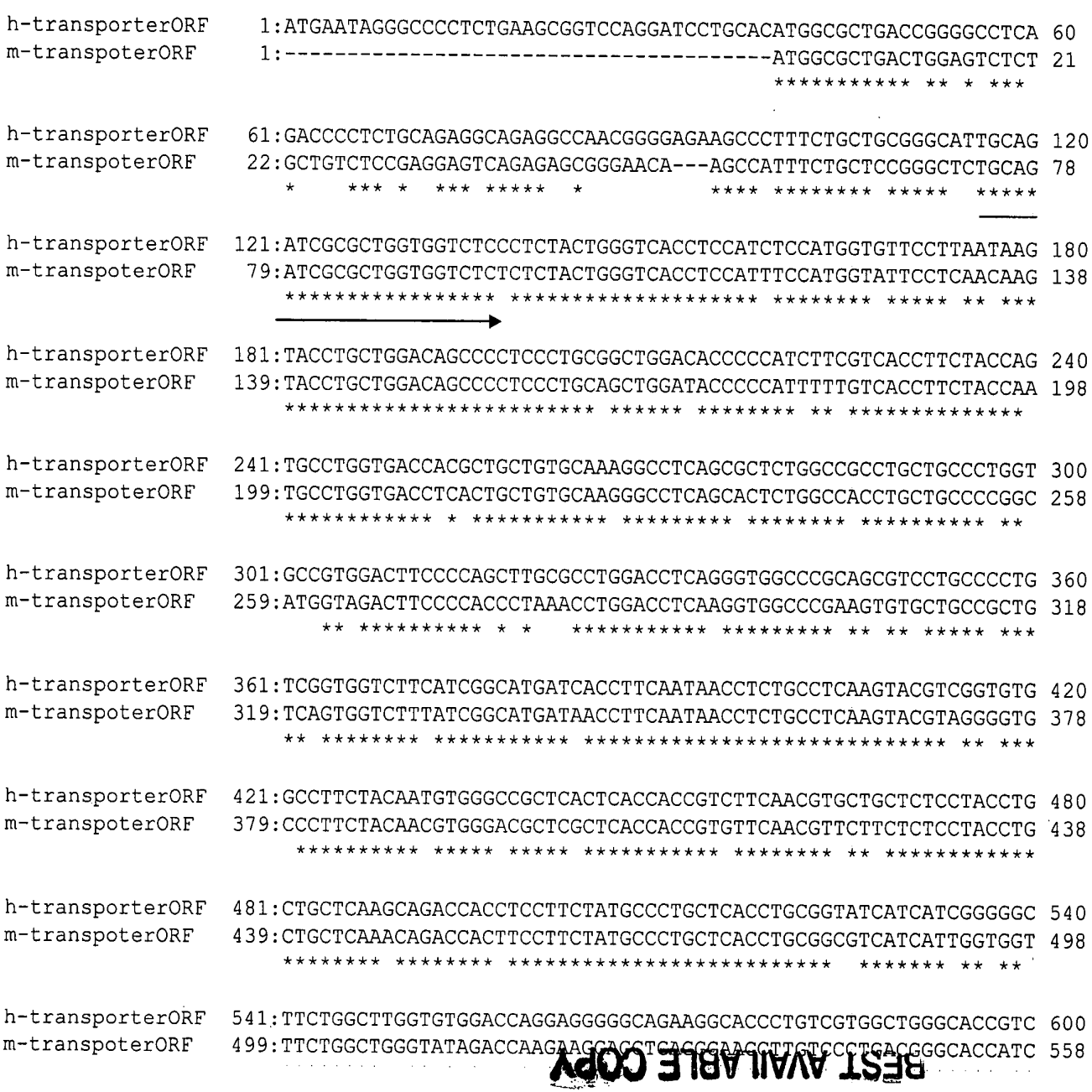


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Fig. 1-2

```
h-transporterORF  601:TTCGGCGTGCTGGCTAGCCTCTGTGTCTCGCTCAACGCCATCTACACCACGAAGGTGCTC 660
m-transpoterORF   559:TTCGGGGTGCTGGCCAGCCTCTGCGTCTCCCTCAATGCCATCTATACCAAGAAGGTGCTC 618
                      ***** ******** ******** ***** ***** ******** **** **********

h-transporterORF  661:CCGGCGGTGGACGGCAGCATCTGGCGCCTGACTTTCTACAACAACGTCAACGCCTGCATC 720
m-transpoterORF   619:CCTGCAGTAGACCACAGTATCTGGCGCCTAACCTTCTATAACAATGTCAATGCCTGCGTG 678
                      ** ** ** ***  *** *********** ** ***** ***** ***** ****** *

h-transporterORF  721:CTCTTCCTGCCCCTGCTCCTGCTGCTCGGGGAGCTTCAGGCCCTGCGTGACTTTGCCCAG 780
m-transpoterORF   679:CTCTTCTTGCCCCTGATGATAGTGCTGGGCGAGCTCCGTGCCCTCCTGGCCTTCACTCAT 738
                      ****** ******** *  *  **** ** ***** *  ***** *  * ***  * **

h-transporterORF  781:CTGGGCAGTGCCCACTTCTGGGGGATGATGACGCTGGGCGGCCTGTTTGGCTTTGCCATC 840
m-transpoterORF   739:CTGAGCAGTGCCCACTTCTGGCTCATGATGACGCTGGGTGGCCTGTTTGGCTTTGCCATC 798
                      *** *****************   ************** **********************

h-transporterORF  841:GGCTACGTGACAGGACTGCAGATCAAGTTCACCAGTCCGCTGACCCACAATGTGTCGGGC 900
m-transpoterORF   799:GGCTATGTGACAGGACTGCAGATCAAATTCACCAGTCCCCTGACCCATAACGTGTCAGGC 858
                      ***** ******************** *********** ******** ** ***** ***

h-transporterORF  901:ACGGCCAAGGCCTGTGCCCAGACAGTGCTGGCCGTGCTCTACTACGAGGAGACCAAGAGC 960
m-transpoterORF   859:ACGGCCAAGGCCTGTGCACAGACAGTGCTGGCCGTGCTCTACTACGAAGAGATTAAGAGC 918
                      ***************** ***************************** ****  ******

h-transporterORF  961:TTCCTCTGGTGGACGAGCAACATGATGGTGCTGGGCGGCTCCTCCGCCTACACCTGGGTC 1020
m-transpoterORF   919:TTCCTGTGGTGGACAAGCAACCTGATGGTGCTGGGTGGCTCCTCCGCCTACACCTGGGTC 978
                      ***** ******** ****** ************* ************************

                                                          <-------------------

h-transporterORF 1021:AGGGGCTGGGAGATGAAGAAGACTCCGGAGGAGCCCAGCCCCAAAGACAGCGAGAAGAGC 1080
m-transpoterORF   979:AGGGGCTGGGAGATGCAGAAGACCCAGGAGGACCCCAGCTCCAAAGATGGTGAGAAGAGT 1038
                      *************** ******* * ****** ****** *******  * ********

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h-transporterORF 1081:GCCATGGGGGTGTGA                                          1095
m-transpoterORF  1039:GCTATCAGGGTGTGA                                          1053
                      ** **  ********
```

For RT-PCR Forward primer: TGCAGATCGCGCTGGTGGTCTC
Reverse primer: GCCCCTGACCCAGGTGTAGGC

# Fig. 2

gattcggcacgaggCGCTCCGCTTCCCACGCGGTCCCCGACCTGTTCTTTCCTCCTCCACCCTGCCCTTCTGTCCCTCTCCCTTCCTTTC
TCCCCTCGACTCGTCCCTATTAGGCAACAGCCCCTGTGGTCCAGCCGGCCATGGCTGTCAAGGCTCACACCCTTAGCTAGGCCCCTTCTC
CCTTCCCTGGGTCTTGTCTCATGACCCCCTGCCCCGCCCGGGAGCGAGCGCGATGTGGAGCAGTGCCTCTGGCAAGCAGAACTTCACCCA
AGCCATGTGACAATTGAAGGCTGTACCCCCCAGACCCTAACATCTTGGAGCCCTGTAGACCAGGGAGTGCTTCTGGCCGTGGGGTGACCT
AGCTCTTCTACCACCATGAACAGGGCCCCTCTGAAGCGGTCCAGGATCCTGCGCATGGCGCTGACTGGAGGCTCCACTGCCTCTGAGGAG
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TGTCAGAAAGCTGCCAAATCTCCTGTCTGCCCCATCTTGTTTTGGGAAAACCCTACCAGGAATGGCACCCCTACCTGCCTCCTCCTAGAG
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ATGGGTTGTGATCCCACTAATTGAAGGGATTTGGGTGACCCCACACCTCTGGGATCCAGGGCAGGTAGAGTAGTAGCTTAGGTGCTATTA
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GTATGGCAGACCTGTTCATGGCAGCTGCACCCTGGGGTGGCTGATAAGAAAACATTCACCTCTGCATTTCATATTTGCAGCTCTAGAACG
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GTCCACTTGTAACCTCTGTTCCCATGACAGAGCCCTTTGAATACCTGAACCCCTCATGACAGTAAGAGACATTTATGTTCTCTGGGGCTG
GGGCTGAAGGAGCCCACTGGTTCTCACTTAGCCTATCTGGCTCCTGTCACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAActcgag

For Probe5' side

Forward primer: TGCAGATCGCGCTGGTGGTCTC

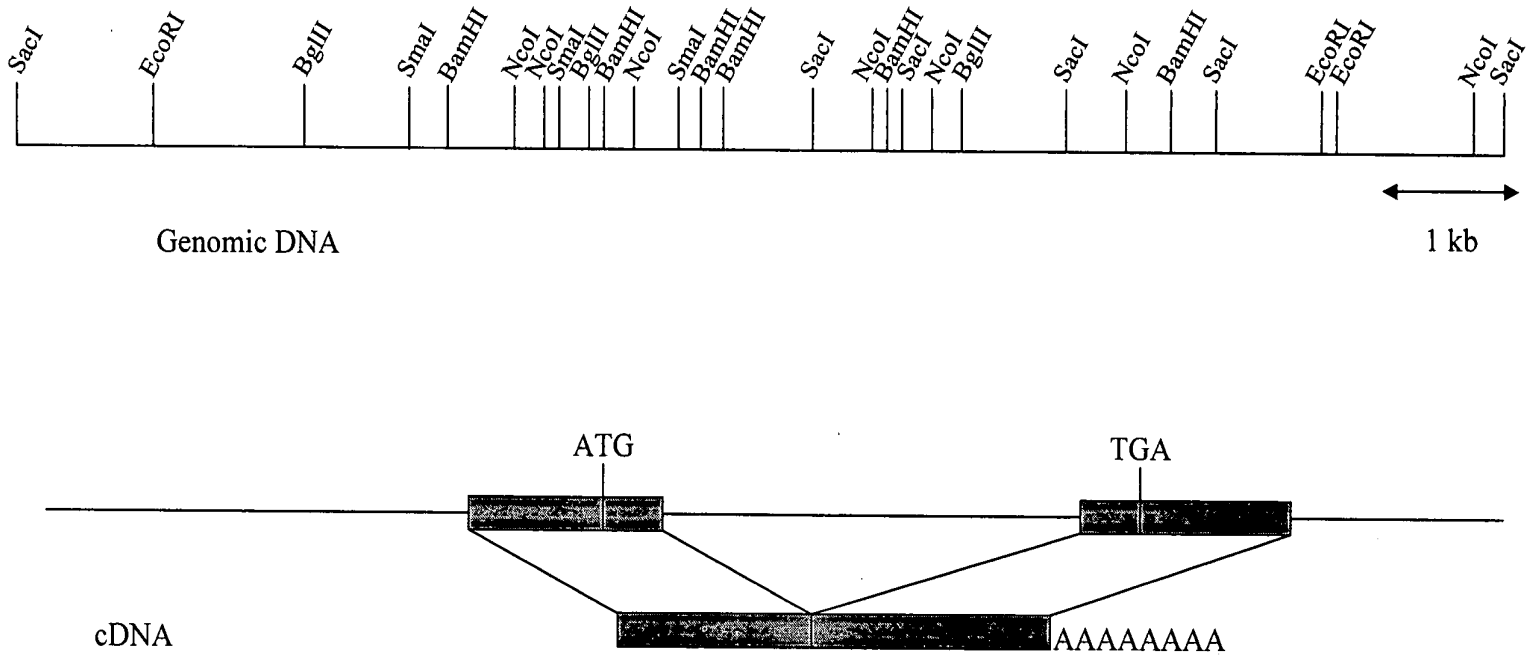
Reverse primer: GCTCCTTCTTGGTCTATACC

3' side

Forward primer: AGACCACTTCCTTCTATGCC

Reverse primer: GCCCCTGACCCAGGTGTAGGC

Fig. 3


SacI
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BamHI
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SmaI
BglII
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BamHI
SacI
NcoI
BamHI
SacI
NcoI
BglII
SacI
NcoI
BamHI
SacI
EcoRI
EcoRI
NcoI
SacI
Genomic DNA
1 kb
ATG
TGA
cDNA
AAAAAAAA

Fig. 4-1

GAGCTCAATTAACCCTCACTAAAGGGAGTCGACTCGATCCTTTACAGAAAACTTGCAAACCCTCTTGGAGTAGAAAAGTAGTAGTATCTGACACAAGTA
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TTCCCCCTTGCTGTGCTGGGAATTGAACCCAGGACCTTGTGCATGCCAGGCAAGTACTCTAACACTGAGCTATAGCCCCAATCTTTCATCCAAGTCTCTA
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Fig. 4-2

GGTGAGGCCTTGCGCCCGCCATGCCTCTGTCATTGCCCCTCGGGCCGCCTCCCTGAACCTCCGTGACCGCCCTGCAGTCCTCCCTCCCCCCCTTCGACTCG
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CACCCTTAGCTAGGCCCCTTCTCCCTTCCCTGGGTCTTGTCTCATGACCCCCTGCCCCGCCCGGGAGCGAGCGCGATGTGGAGCAGTGCCTCTGGCAAGC
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GGCCCATCTCTGATAAGTGCTGTGGGGACTCTAGAGTAGGGAGGAGGAGGAGCAATCTAAGCAGGCCTTACTGAGAAGTCCTTGCTGGCATGTGGCTGC
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Fig. 4-3

TCATTCTGGGCTCTACTCCCTCAGCCATTTTTTGGTGTGGGAGTTAGACTTTGGATATGTTGATGATGAGGTAAGGGCCACAGAACAGTCTGAACTGTGG
TATCAGAATCCTGTCCCTCTCCCTCTCTCCTCATCCCTCTTCACCTTGTCACTCCTCTGTCTGCTACAGGTGGTTTCTGGCTGGGTATAGACCAAGAGGGA
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Fig. 5

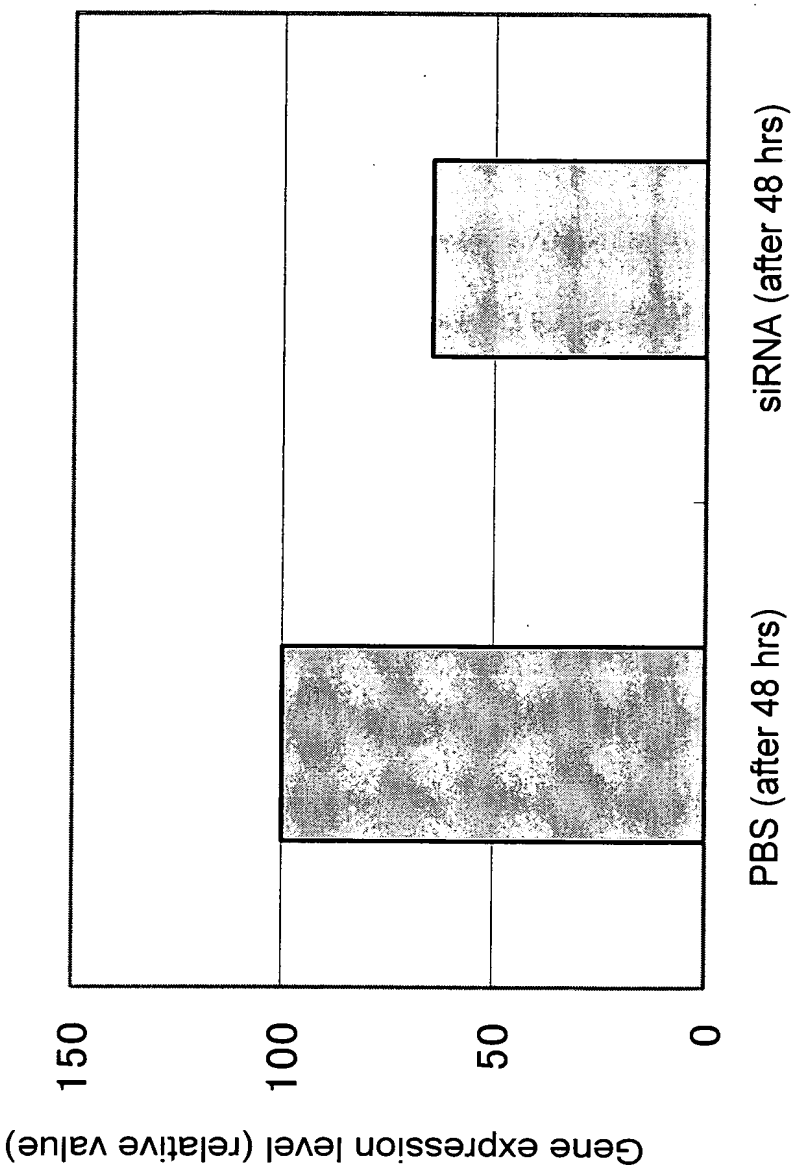
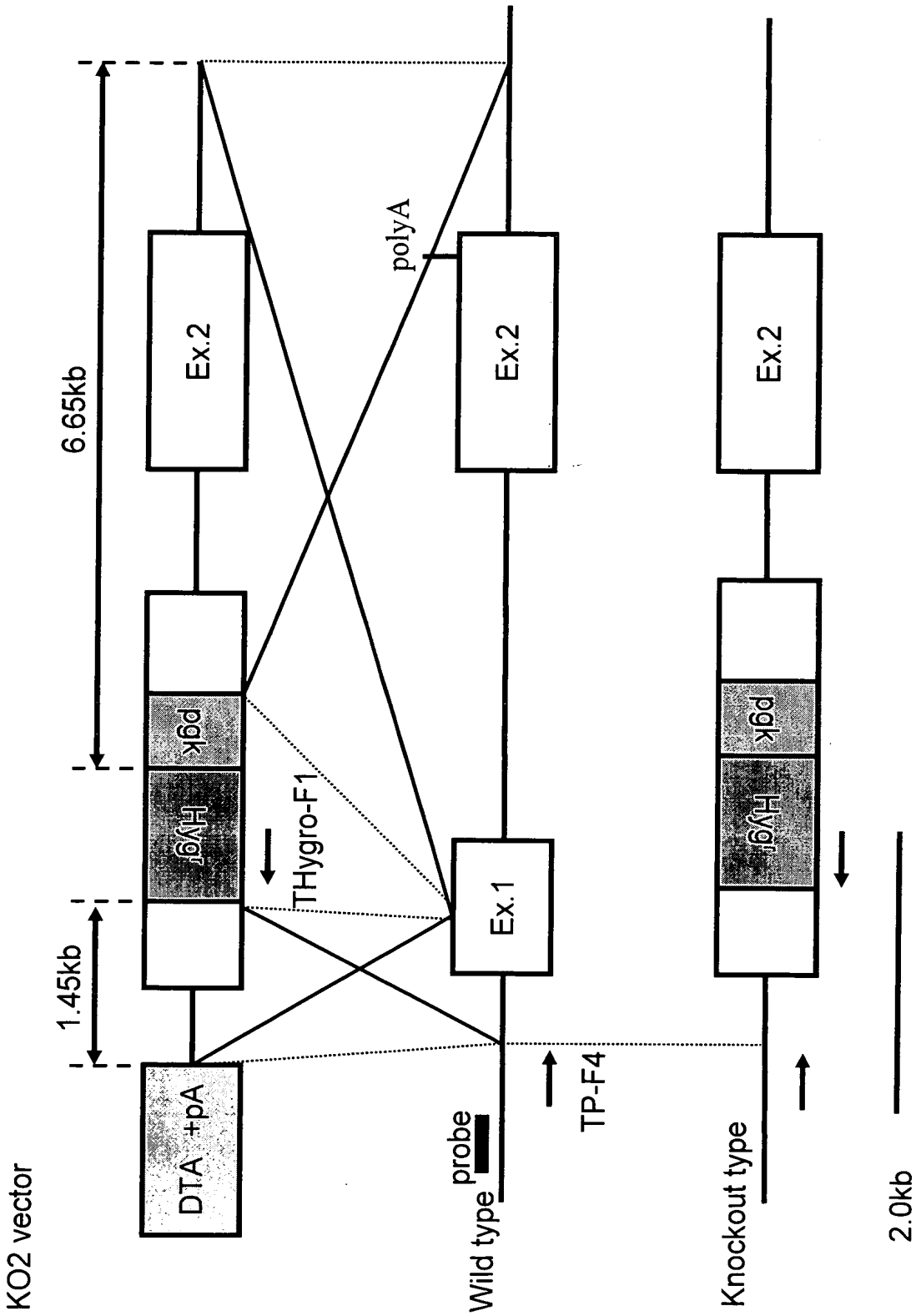

Gene expression level (relative value)
150
100
50
0
PBS (after 48 hrs)
siRNA (after 48 hrs)

Fig. 6


KO2 vector
6.65kb
1.45kb
DTA +pA
pgk
Hygr
THygro-F1
Ex.2
Ex.1
polyA
probe
Wild type
TP-F4
Knockout type
2.0kb

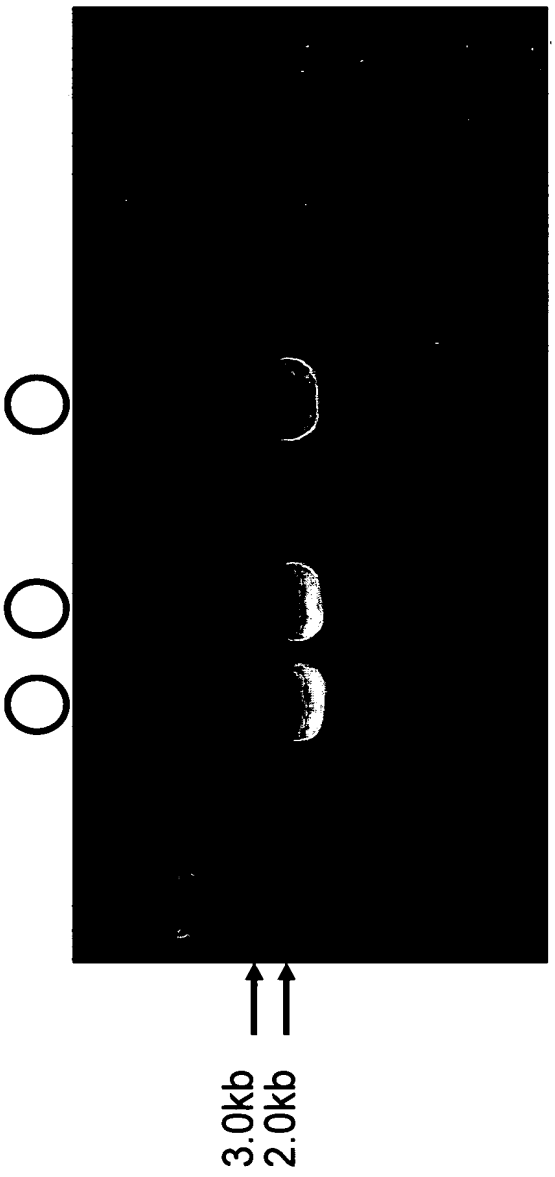
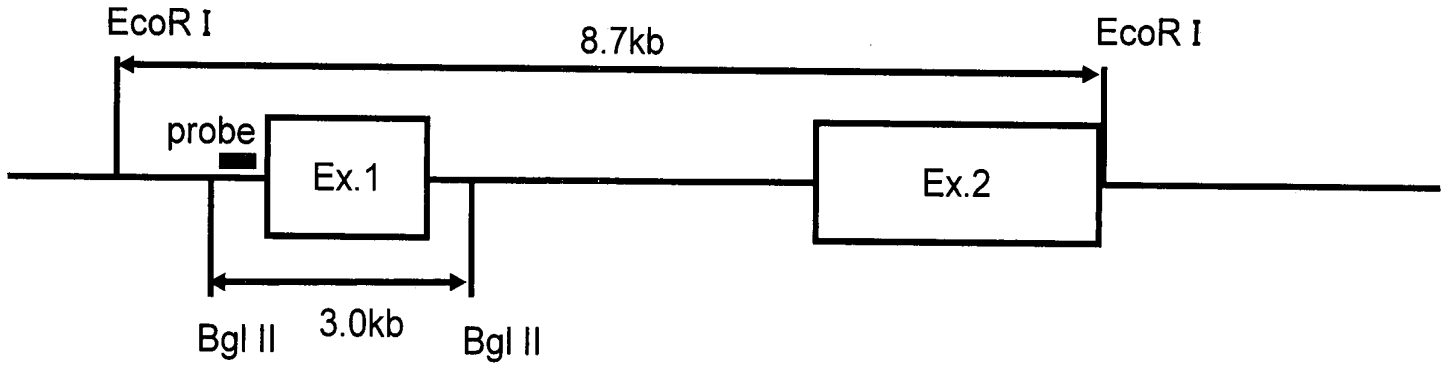



Fig. 7

Fig. 8

Wild type



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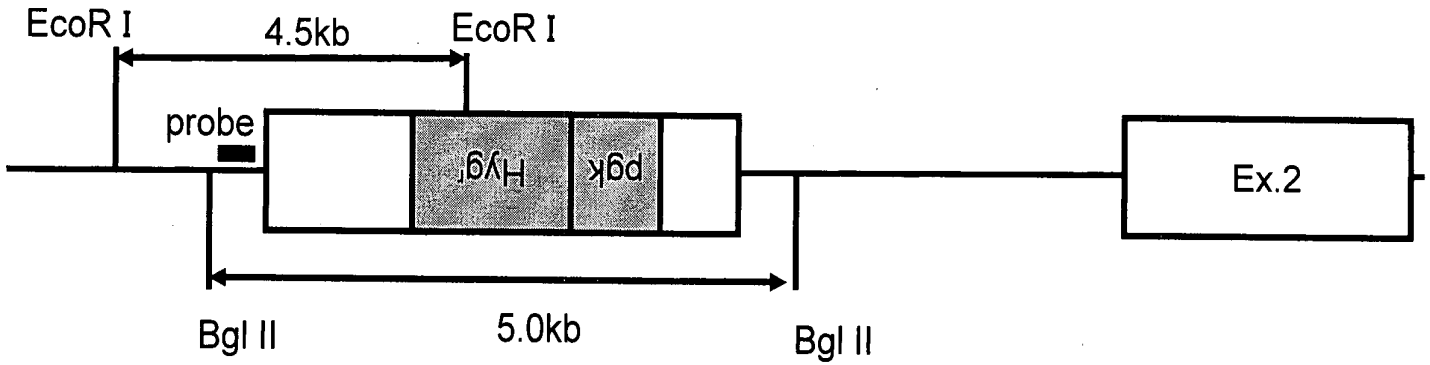
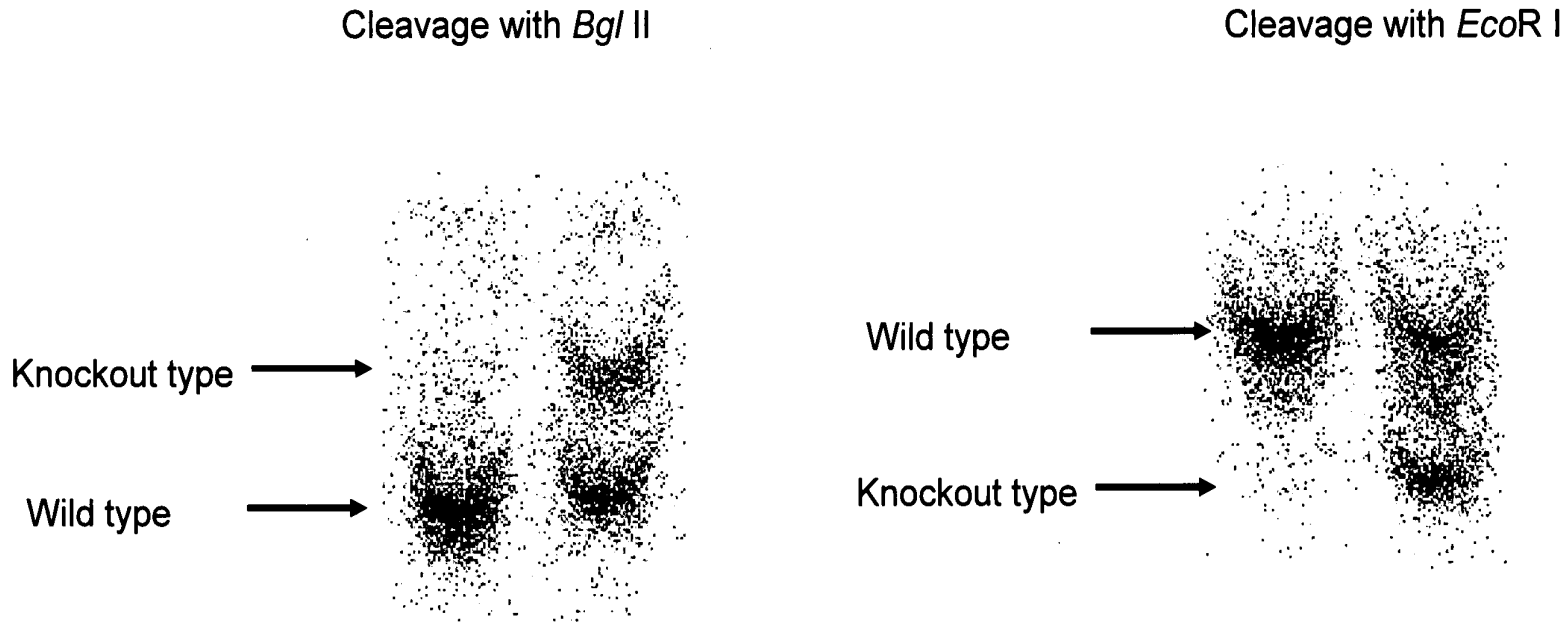


Fig. 9


Cleavage with *Bgl* II
Knockout type
Wild type
Cleavage with *Eco*R I
Wild type
Knockout type

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